WS-855A

15” TFT Display
10-slot Workstation

User Manual

Version 1.1

September 18, 2003

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Table of Contents

Chapter 1. Product Information 3
1.1. General Information 3
1.2. Product Specifications 4
1.3. Dimensions 6
1.4. Front Accessible CD-ROM, 3.5" FDD 7
1.5. The Membrane Keypad 8
Chapter 2. System Setup 9
2.1 Adding Cards 9
2.2 Disk Drives installation 10
2.3 Power Supply Installation 11
2.4 Cooling Fan Installation 12
2.5 Panel Mounting 13
2.6 Rack Mounting 14
Chapter 3. Maintenance 15
3.1 Power Supply 15
3.2 Cooling Fan 15
3.3 Disk Drives 15
Appendix B Keypad 17
A. Block Diagram 17
B. Jumper Setting 17
Appendix C User Mode OSD Item Description 19
Appendix D Touch Panel Controller 22
Appendix E Touch Pad 23
Appendix F CHECK LIST 24

Chapter 1. Product Information

1.1. General Information

The WS-855A series workstations take advantage of modern flat-panel display, CPU board, power supply and passive backplane for minimum size. It is an IBM PC/AT compatible computer specially designed to meet the applications for industrial working environments.

- **LCD Display**
  WS-855A is equipped with a color 1024x768 resolution 15" TFT LCD.

- **Versatile Passive Backplane**
  WS-855A can be equipped with PCI-10S (standard), PCI-10S2, BP-10S, IP-10S or PX-10S 10-slot backplane.

- **Sealed-membrane Accessible Keypad**
  The sealed-membrane keypad has 59 data keys including 10 function keys to allow users enter data directly. Users also can attach the external keyboard through a connector on the front panel of WS-855A.

- **Power Switch, Ext. Keyboard and USB Port**
  The front lockable drive door protects the Power switch, Ext. board and the USB port.

- **Optional Touch Screen**
  Touch Screen: Analog resistive type with RS-232 interface controller.

- **Power Supply**
  WS-855A is equipped with ACE-832A, 300W ATX industrial power supply.

- **Optional Power Supplies**
  ACE-925T/932T/828T –48VDC input
  ACE-925C/828C +24VDC input
  ACE-916V +12VDC input

- **Dimensions**
  483(W)x354(H)x265(D)mm.

1.2. Product Specifications

- Front Panel: Aluminum meets NEMA 4 or IP65.
- 8U Height, rack-mount or panel-mount with front LCD on/off switch.
- Disk Drive Bay: Support one 5.25" Drive CD-ROM, one 3.5" FDD and one 3.5" HDD.
- 59 entry keys including 10 function keys.
- Lockable drive door design & anti-vibration card clamp included.
- Backplane: PCI-10S (standard), PCI-10S2, BP-10S, IP-10S, PX-10S 10-slot backplane.
- 12cm ball bearing cooling fan with removable fan filter.

- **LCD Display Model (DM-150)**

  - ✓ CHII_MEI 15”LCD M150x2-T05 15.0" high brightness TFT LCD
  - ✓ DVI connector and VGA analog connector for supporting digital input
  - ✓ Resolution: 1024X768
  - ✓ LCD Display Colors: 262144(18bits)
  - ✓ Brightness: 250 cd/m^2
  - ✓ Hor. Frequency: 15-80KHz
  - ✓ Ver. Frequency: 50-85Hz
  - ✓ Operating Temperature: 0-50 ^oC
  - ✓ Storage Temperature: -20~60 ^oC
  - ✓ Viewing Angle (degree): R/L: 120, U/D: 100
  - ✓ LCD MTBF: 50,000 hrs
  - ✓ Backlight MTBF: 25,000 hrs

- **Dynapro Touch Screen (Optional)**

  Type: Analog Resistive
  Resolution: Continuous
  Light transmission: Typical value 72%
  Surface Hardness: 4H (Test condition: ASTM D3363-92A)
  8-wire touch screen
  Support driver: Supports DOS, Windows 3.1, 95, 98, 2000, NT.

- **Industrial Power Supply**

  Power Supply: ACE-832A, 300W industrial power supply
  Shock: 10 G peak acceleration (11 msec. duration)
  Safety: meet UL/CSA/TUV
  EMI: meet FCC/VDE class A

- **Environmental Specifications**

  Operating Temperature : 0 ~ 50℃

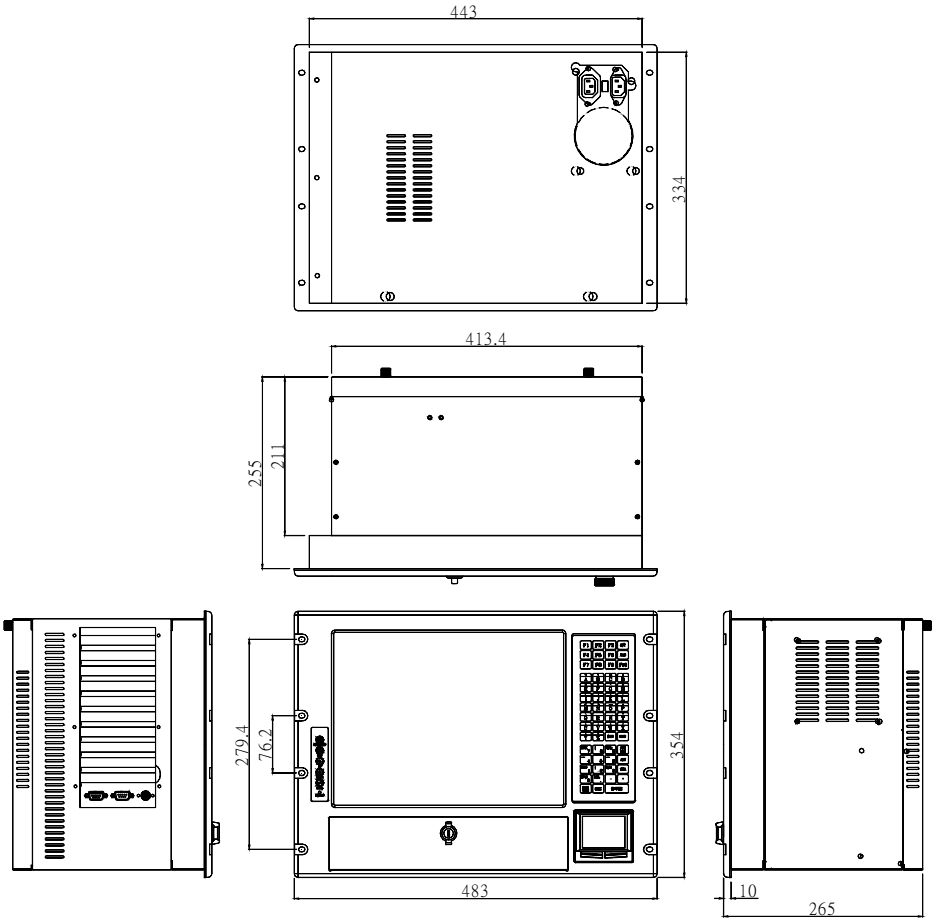
  Relative Humidity: 10-95% @40 ℃ , non-condensing

  Vibration: 5 to 17 Hz, 0.1"double-amplitude displacement,

  17 to 500 Hz, 1.5 G Peak to peak

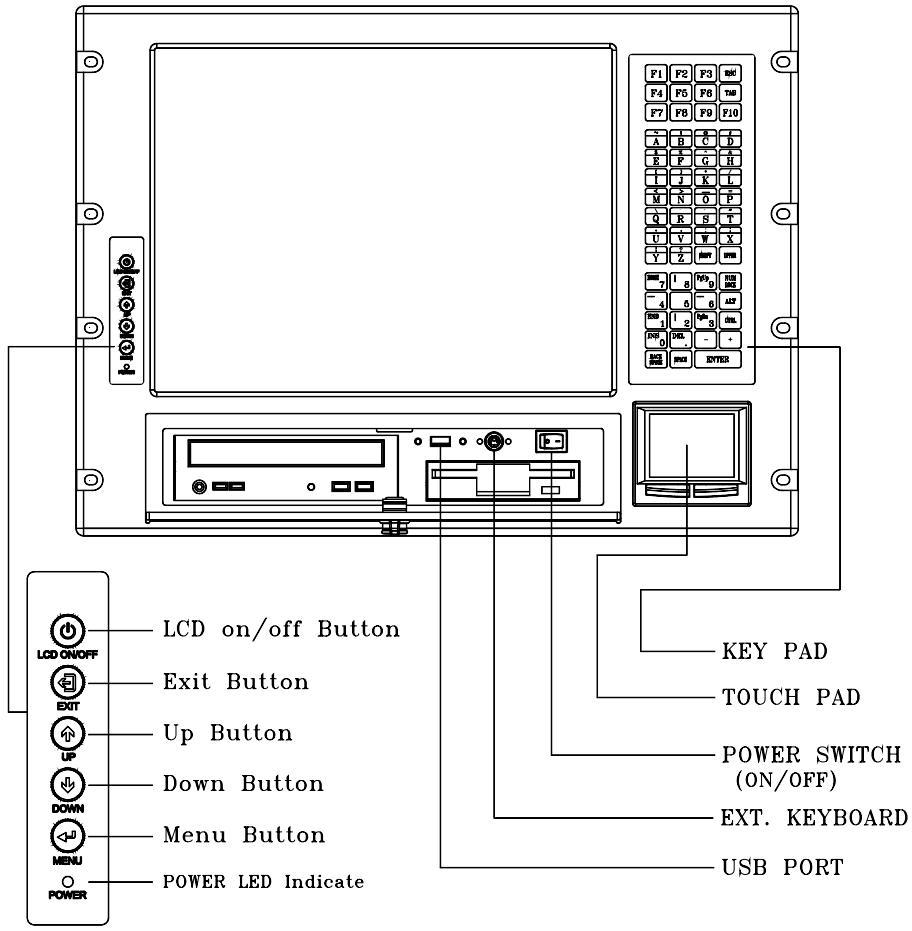
1.3. Dimensions

The following diagram indicates the dimensions of WS-855A.



1.4. Front Accessible CD-ROM, 3.5" FDD

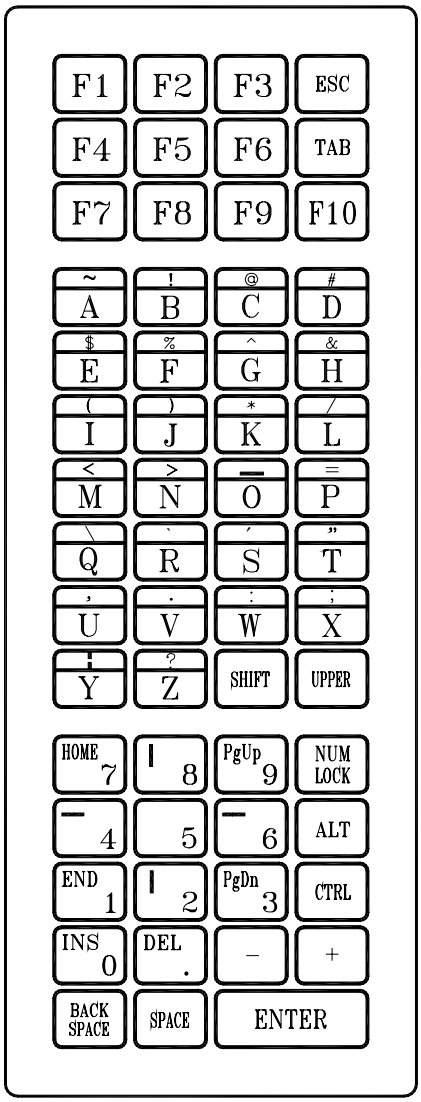
WS-855A workstation is equipped with one 5.25″CD-ROM and 3.5″ FDD that can be accessible by opening the front lockable drive door as shown in the following diagram. Power ON/OFF switch, Ext.-keyboard and USB port are also accessible through this same front lockable drive door.



****For detail OSD item description, please refer to Appendix C User Mode Operation.**

1.5. The Membrane Keypad

The sealed-membrane keypad has 59 keys including 10 function keys to allow users enter data directly. Users can also attach the external keyboard through a connector on the front panel of WS-855A. A built-in controller will merge the signals from the membrane keypad and general keyboard into one signal, which acts as a standard IBM PC/AT keyboard.

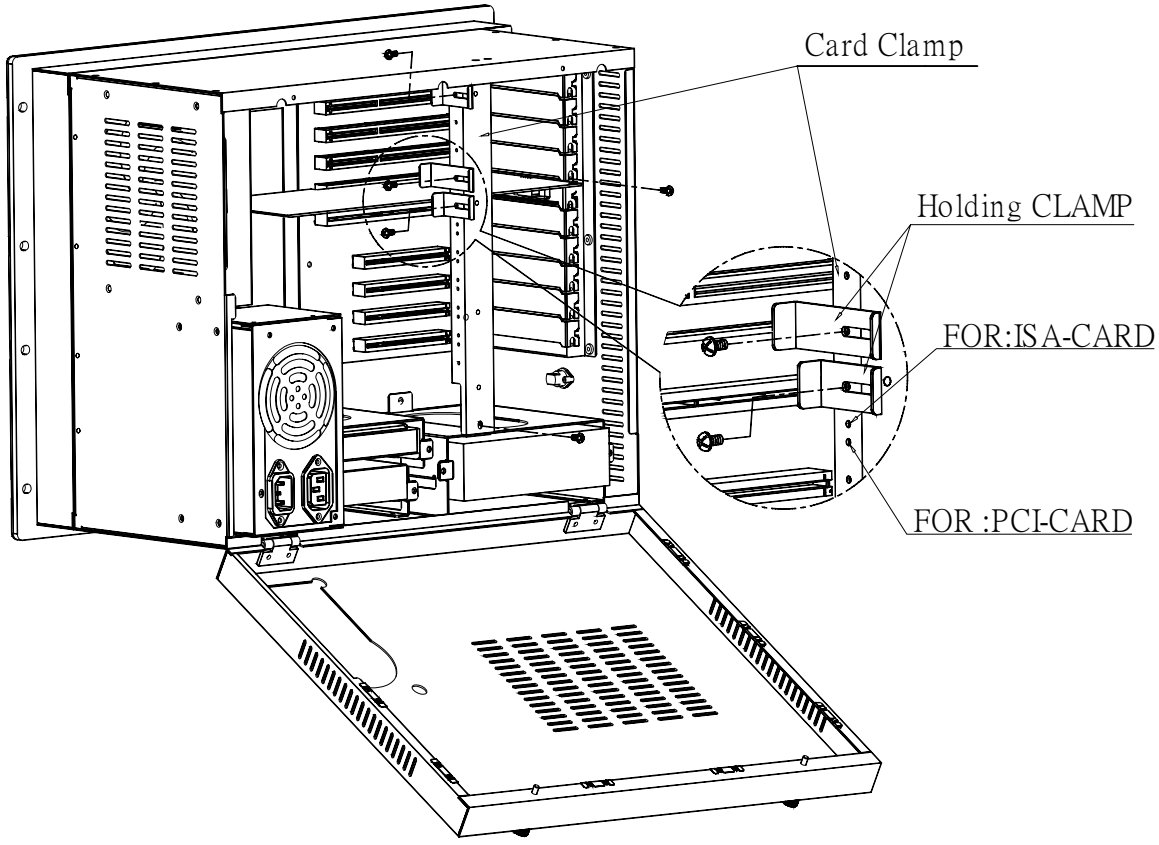

F1 F2 F3 ESC
F4 F5 F6 TAB
F7 F8 F9 F10
~ A ! B @ C # D
$ E % F ^ G & H
(I) J * K / L
< M > N _ 0 = P
\ Q R S " T
, U . V : W ; X
Y ? Z SHIFT UPPER
HOME 7 8 PgUp 9 NUM LOCK
4 5 6 ALT
END 1 2 PgDn 3 CTRL
INS 0 DEL . - +
BACK SPACE SPACE ENTER

Chapter 2. System Setup

The WS-855A 15" TFT LCD 10-slot workstation is very easy to set up for operation. All you have to do is to open the back cover, install your CPU card, display control card, hard disk drive and other I/O cards required by your application, and you are ready to mount into a 19" rack or within a panel and start to operate.

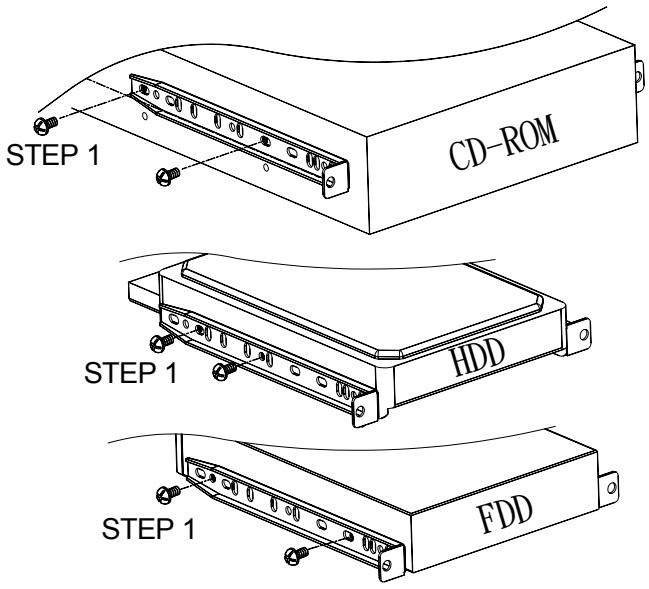
2.1 Adding Cards

Before installing the cards, the rear cover should be removed first by releasing the screws as illustrated in the diagram below. Then, users can slowly slide the card in and carefully press it into the slot of backplane. Please use the clamps shown in the diagram to affix your cards.

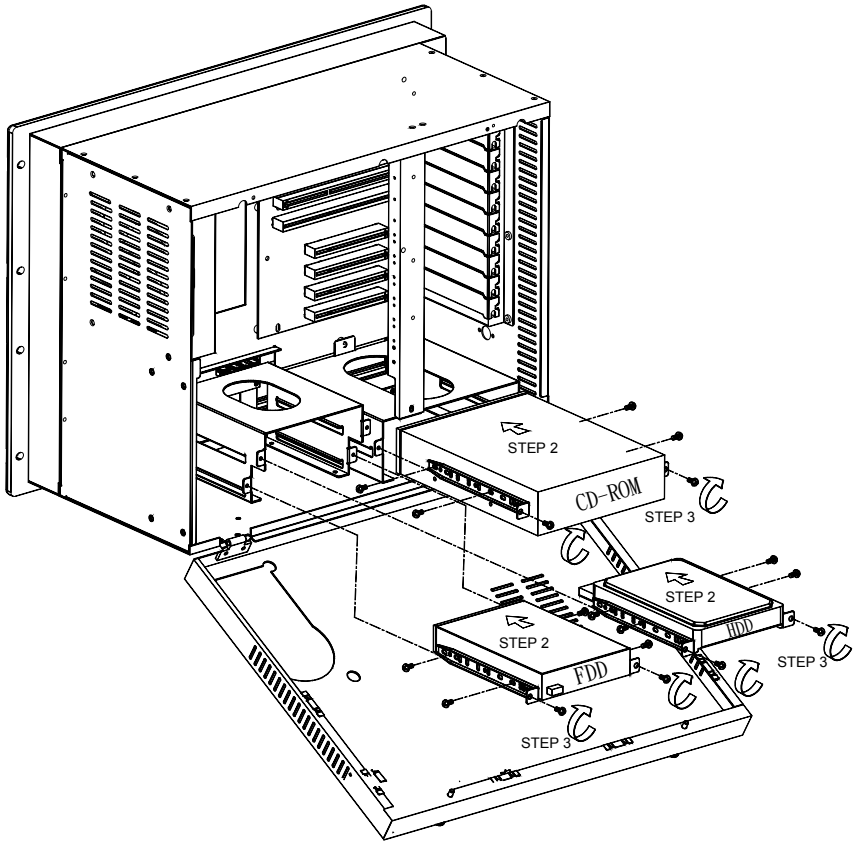


2.2 Disk Drives installation

WS-855A is equipped one 5.25" Drive CD-ROM, one 3.5" FDD and one 3.5" HDD which should be installed from the rear of chassis. Users must use the clamps to fix 5.25″CD-ROM, 3.5″FDD and 3.5″HDD. Please refer to the diagrams below.

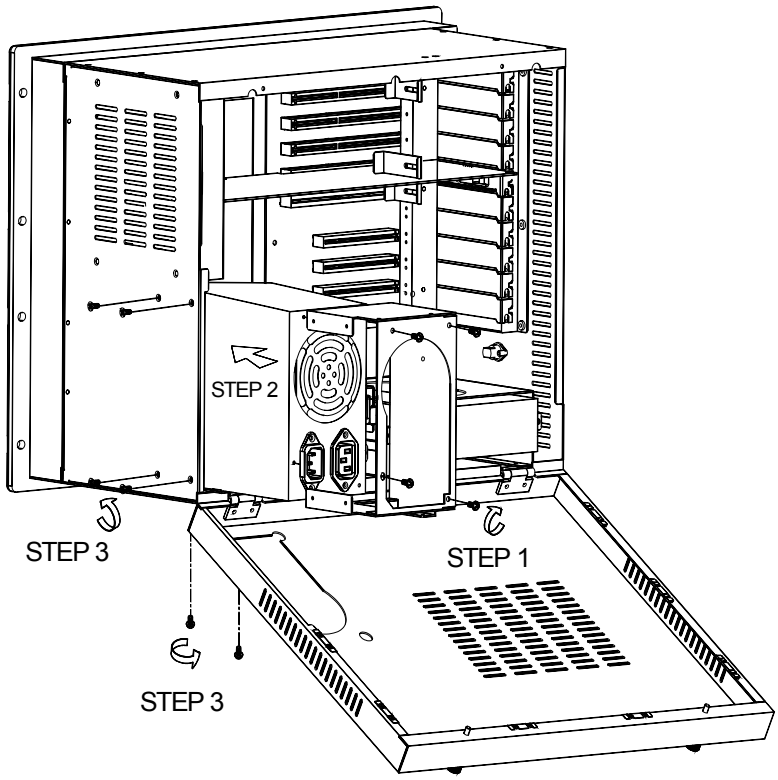


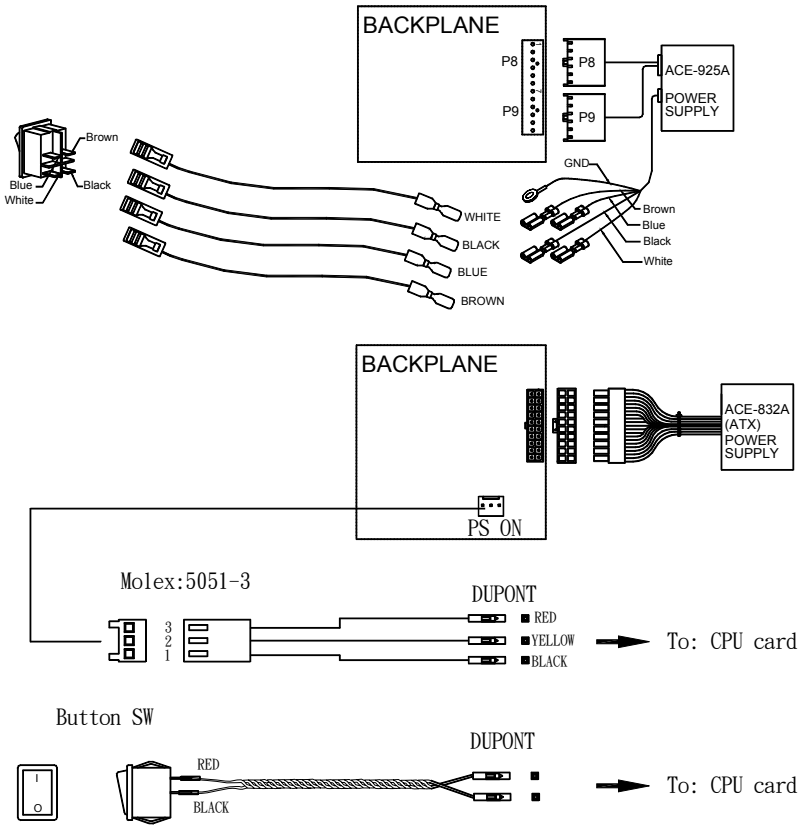
(Fix the drivers as by diagrams shown)



2.3 Power Supply Installation

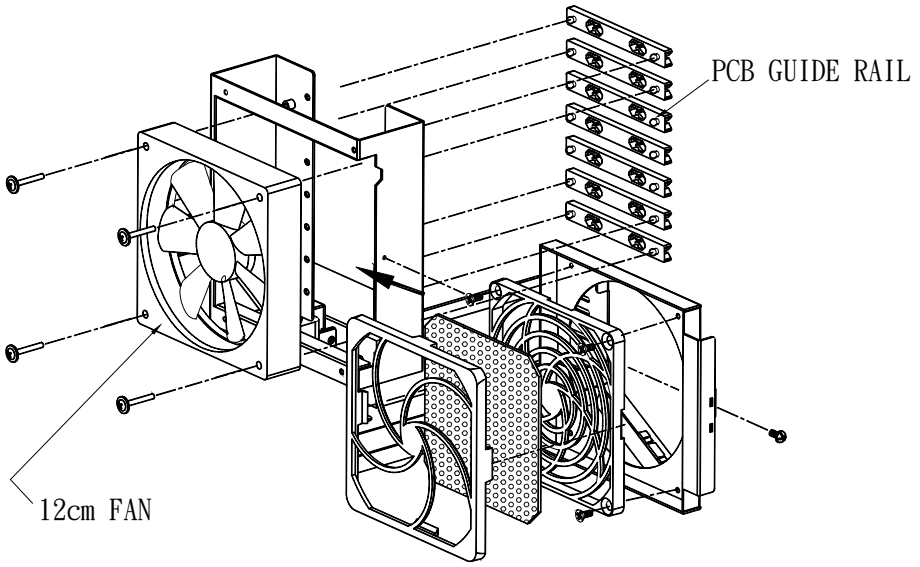
Power supply is equipped at the rear of workstation and some screws are available to fasten it as shown below.



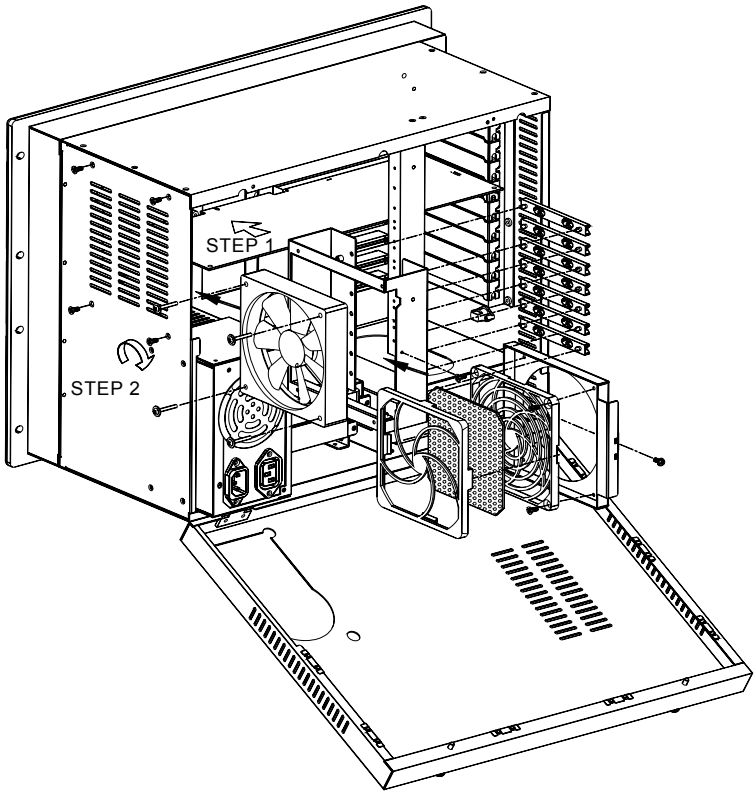


2.4 Cooling Fan Installation

WS-855A is equipped with a 12 cm ball bearing cooling fan with removable fan filter by the side of workstation. The following diagram shows the details of fan and its accessories.

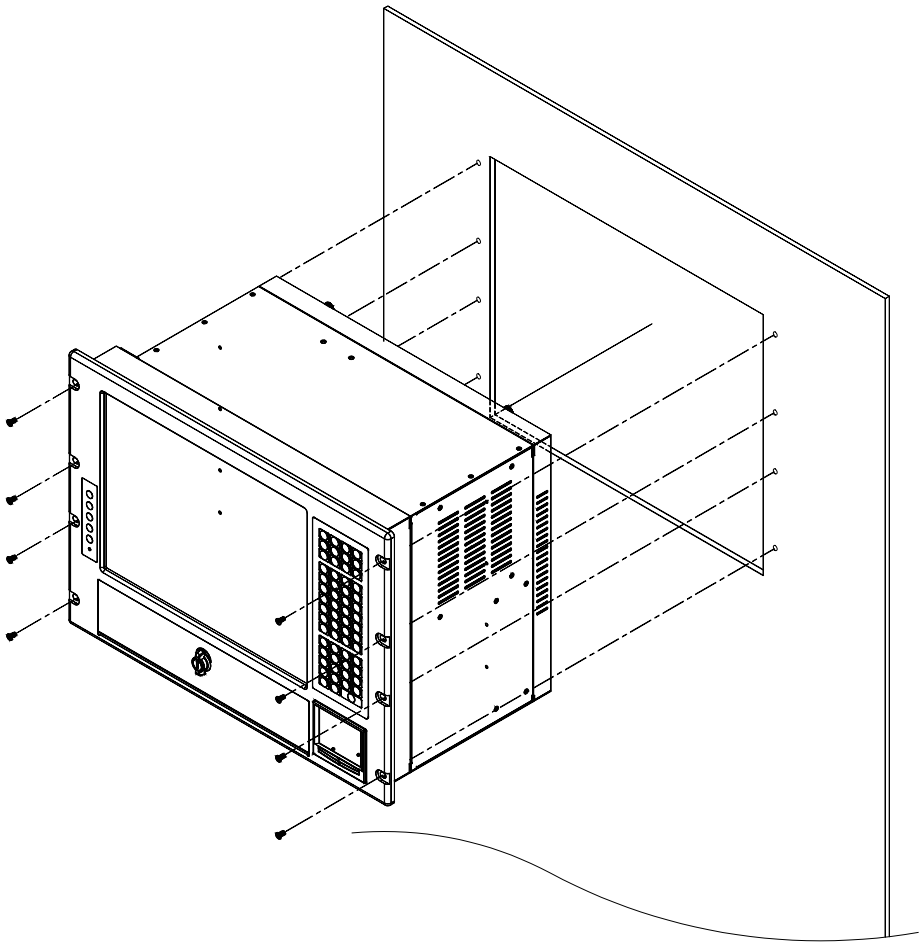


UNIT OF FILTER SETTING



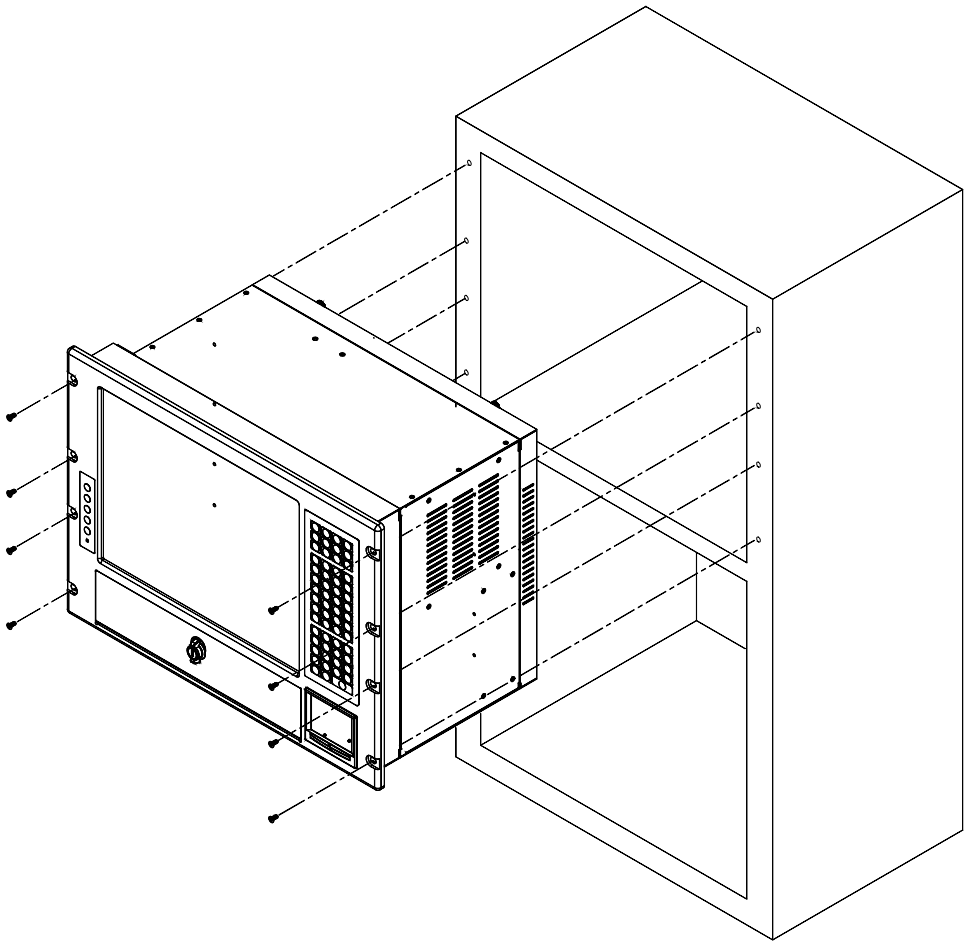
2.5 Panel Mounting

WS-855A can be mounted within a panel as shown in the following figure. Please make sure that the dimensions of the case within panel aperture so that your screw holes line up with the mounting bolts on the flange of WS-855A.



2.6 Rack Mounting

WS-855A can not only be mounted within a panel but also can be mounted in a 19" Rack. The following diagram shows how to mount WS-855A into the 19" Rack.



Chapter 3. Maintenance

There are some essential points that you need to know during maintenance or upgrading process.

3.1 Power Supply

Please refer to the diagram of section 2.3 to unfasten the four screws so as to take the power supply out for maintenance or upgrade.

Warning: Be sure to switch off the power supply and unplug the power cord before you take off a part for either maintenance or upgrade.

3.2 Cooling Fan

WS-855A is equipped with 12 cm cooling fan with removable fan filter by the side of the workstation. Please refer to the diagram of section 2.4. You have to open the chassis and unfasten the four bolt kits to take the fan out for maintenance.
The filter is suggested to be replaced or cleaned at appropriate time depending on the type of working environment the workstation is posted.

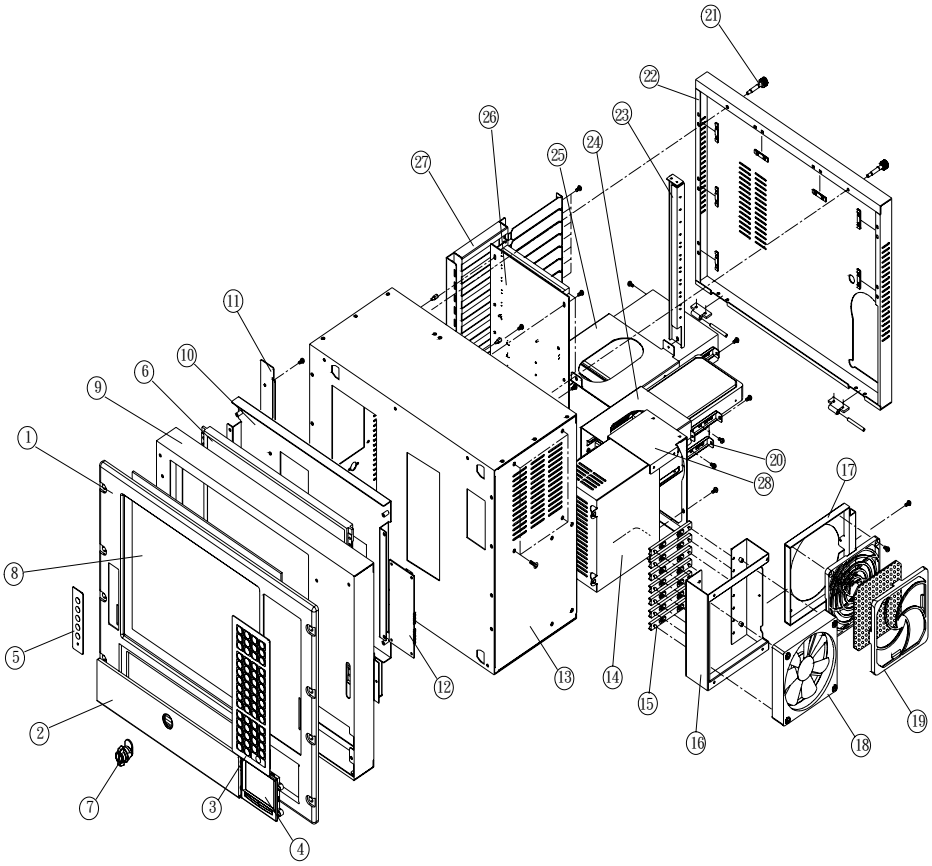
Warning: Do not use the wet filter to filter out the dirt.

3.3 Disk Drives

WS-855A is equipped with one 5.25" CD-ROM, one 3.5" FDD and one 3.5" HDD. Please refer to the diagram of section 2.2 to uninstall 5.25" CD-ROM, 3.5" HDD and 3.5" FDD.

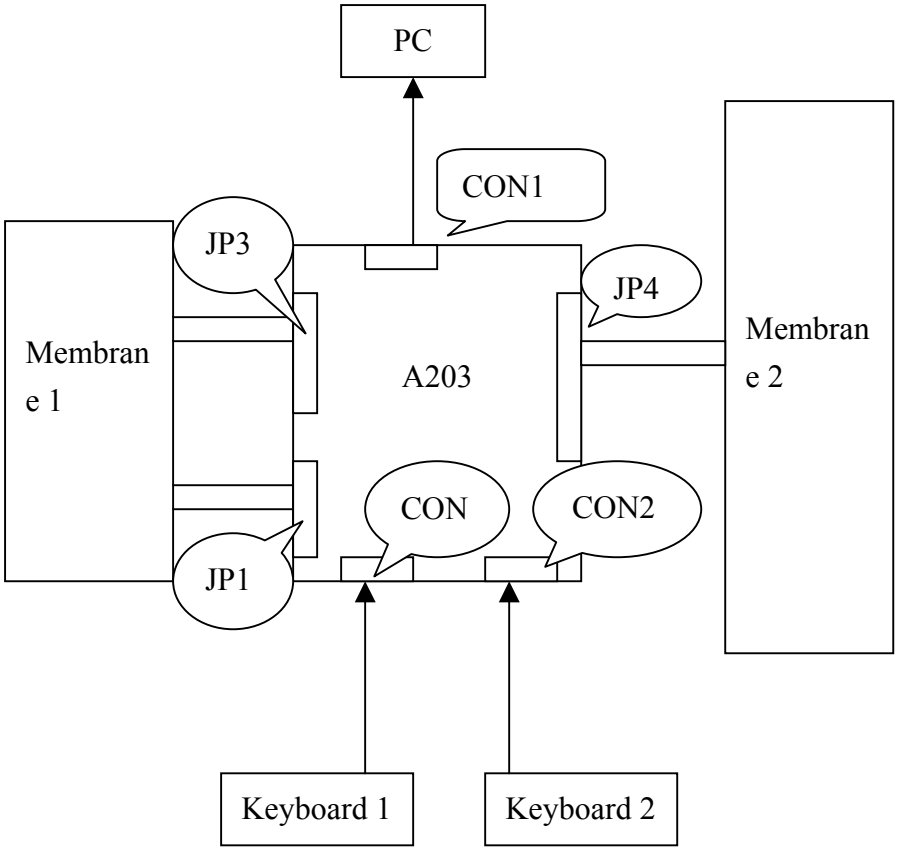
Appendix A Exploded Diagram

Item	Description	Part NO.	Qty	Remark
1	Front panel	42001-0025XX	1	
2	Lockable front door	42002-0011XX	1	
3	59key pad membrane	52100-000007	1	
4	Touch-PAD units	19700-000003	1	
5	OSD Membrane	52100-000076	1	
6	15" TFT LCD CPT-CLAA150XA03	23000-000037	1	
7	Lock	45007-000104	1	
8	Strengthened grass 15"	48113-333257	1	OPTION
9	Front panel bracket	41002-0035XX	1	
10	Display Bracket	41017-010702	1	
11	Cover plate	41022-0007XX	1	
12	KBD-01 Board	131KBD01-00-011	1	
13	Back panel bracket	41003-0011XX	1	
14	Power supply/ACE-832A	ACE-832A	1	OPTION
15	Lead CG-9A	46002-000200	7	
16	Fan bracket	41009-0003XX	1	
17	Filter bracket	41010-0003XX	1	
18	FAN,12cm,2wire	31100-000018	1	
19	Units filter	46016-000400	1	
20	Slide for driver	41021-000100	6	
21	Rear cover screw	42005-000204	2	
22	REAR cover	41022-0006XX	1	
23	Card clamp	41015-0016XX	1	
24	Driver bay (fdd+hdd)	41011-0024XX	1	
25	Driver bay(CD-ROM)	41011-0025XX	1	
26	PCI-10S	PCI-10S	1	OPTION
27	Bracket-10S	41005-0071XX	1	
28	Power bracket	41024-0003XX	1	



Appendix B Keypad

A. Block Diagram



B. Jumper Setting

- **CON1**

Pin1	Pin2	Pin3	Pin4	Pin5
+5V in	GND	GND	DATA	CLOCK

- **CON2**

Pin1	Pin2	Pin3	Pin4	Pin5
+5V in	GND	GND	DATA	CLOCK

- **CON3**

Pin1	Pin2	Pin3	Pin4	Pin5
+5V in	GND	GND	DATA	CLOCK

- **JP3**

Pin1	Pin2	Pin3	Pin4	Pin5
BTN0	BTN1	BTN2	BTN3	BTN4
Pin6	Pin7	Pin8		
BTN5	BTN6	BTN7		

- **JP1**

Pin1	Pin2	Pin3	Pin4	Pin5
LINE0	LINE1	LINE2	LINE3	LINE4
Pin6	Pin7	Pin8	Pin9	Pin10
LINE5	LINE6	LINE7	POWER GOOD LED- out	+5V in
Pin11	Pin12	Pin13		
SCROLL LED DRIVER out	NUM LED DRIVER out	CAPS LED DRIVER out		

- **JP4**

Pin1	Pin2	Pin3	Pin4	Pin5
BTN0	BTN1	BTN2	BTN3	BTN4
Pin6	Pin7	Pin8	Pin9	Pin10
BTN5	BTN6	BTN7	NC	LINE8
Pin11	Pin12			
LINE9	LINE10			

- **JP2**

Membrane	JP2 (1-2)
52100-000182 52100-000183	OPEN
52100-00007 52100-000103 52100-000183	SHORT

Appendix C User Mode OSD Item Description

- **Auto-Adjustment**

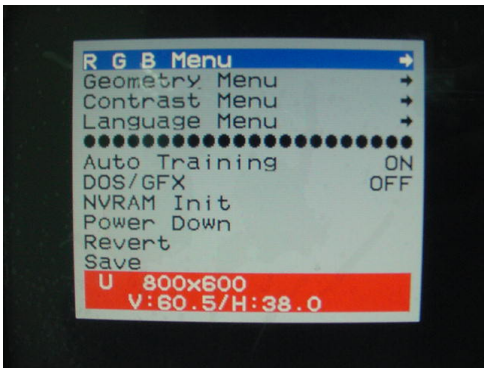
  This item will automatically adjust the H/V position, frequency, phase, and black level.

- **Auto Phase**

  This item will automatically adjust the sampling.

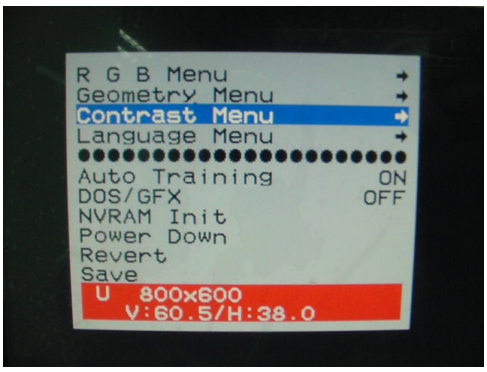
- **Brightness**

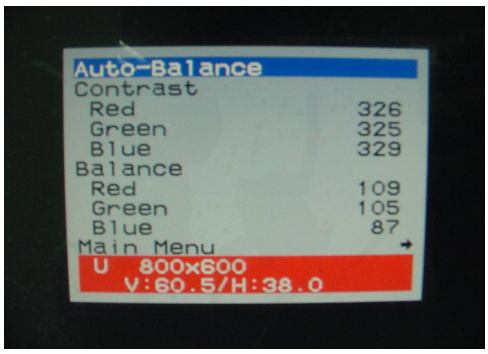
  This item is used to adjust the brightness of screen. This function will also adjust the offset value of ADC. Setting this value too high or too low will destroy the quality of image.



- **Contrast**

  This item is used to adjust the contrast of screen. This function will also adjust the gain value of ADC. Adjust this value too high or too low will destroy the quality of image.





- **DOS/GFX**

  It is used to select VGA input signal to either text mode or graphic mode. (This item is only selectable on resolution of 720/640x400 or 720/640x350.) 400 and 350 standard IBM modes have the same Hsync. and Vsync. Values so AV-9261 MPU cannot differentiate them automatically. For these modes, users need to adjust them manually so as to match proper VGA mode.

- **H. Position**

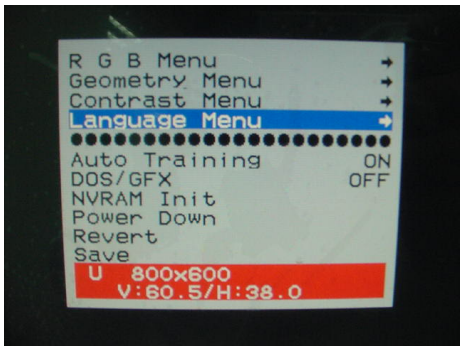
  It is used to adjust horizontal display position of image.

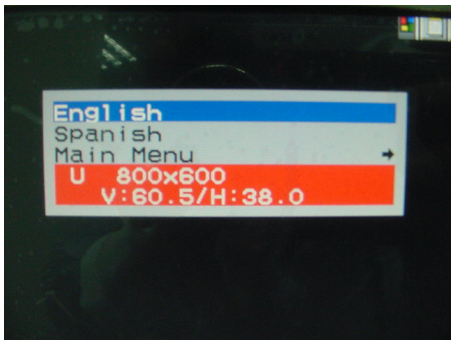
- **V. Position**

  It is used to adjust vertical display position of image.

- **Language**

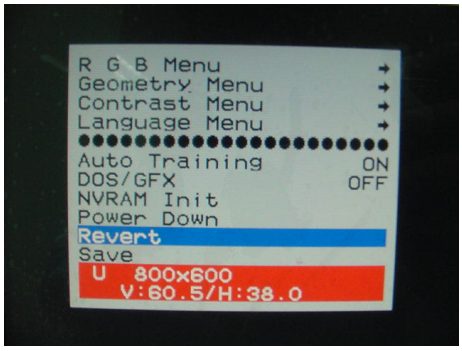
  It is used to select the languages using on OSD display. AV-9261 now can support 2 languages on OSD display. English is the default language.





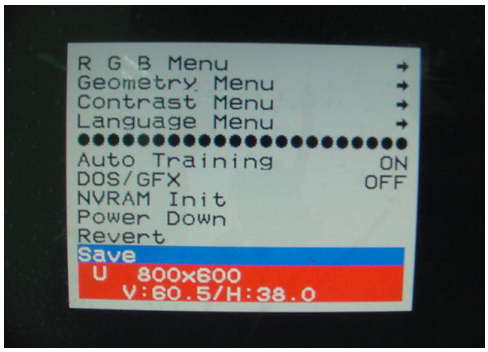
- **Revert**

  It is used to reload original parameters from the factory's OSD data area of the system EEPROM 24c16 device to re-initialize AV-9261 system device. When user adjust OSD data too much and did not gain better quality, user can select this item and MPU will reload default BIOS setting and re-initialize the system.



- **Save**

  It is used to save the parameters into the user OSD adjustment data area of the system EEPROM 24c16 device and close OSD. Whenever users adjust any parameters, it is needed to execute this item to save data into EEPROM. And the next time you turn system's power on, the MPU will use the stored data to initialize the AV-9261 system.



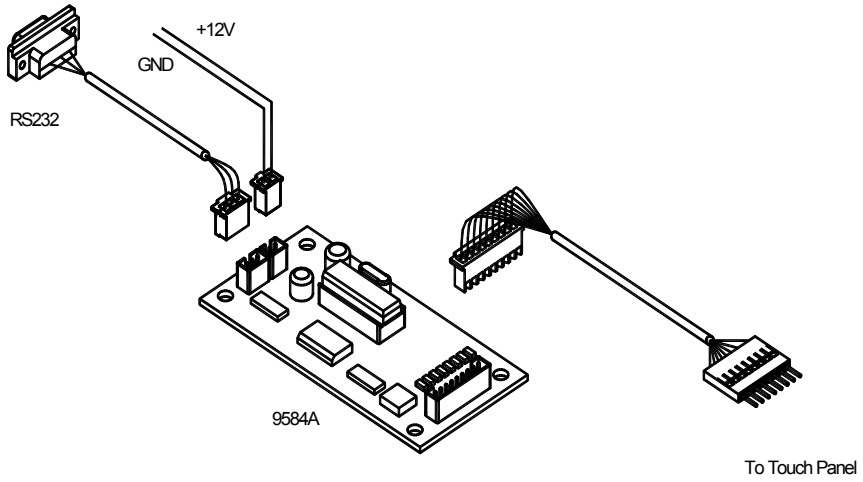
- **Main Menu**

  Every level of OSD have the item name **Main Menu**, this item enables user to leave current level and jump to upper level, or press you can press the **Return** key.

- **Exit**

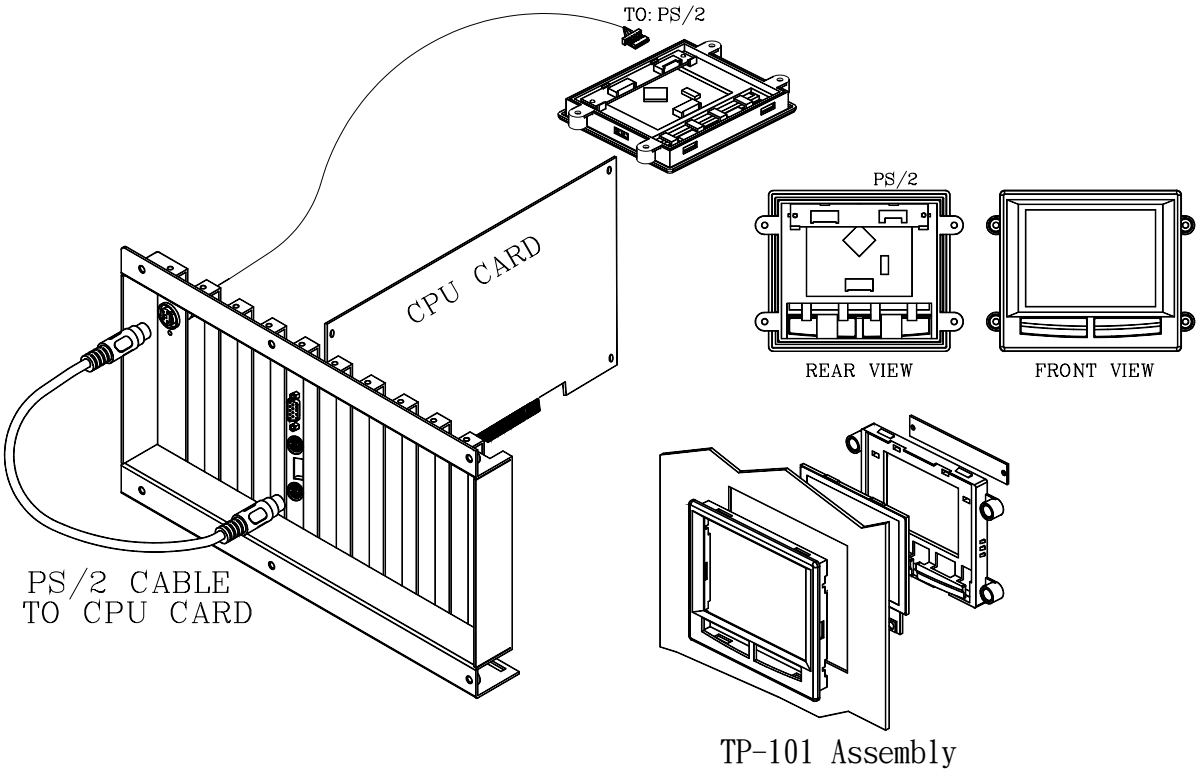
  Press the **EXIT** key to exit the OSD menu when the OSD menu is on top of the level.

Appendix D Touch Panel Controller



Appendix E Touch Pad

TP-101 Touch Pad is PS/2 Mouse compatible. Users must connect the external PS/2 Mouse cable as the in the figure below. Touch Pad is a pointing device for computers and it detects the position of a finger over a touch-sensitive area. To move the cursor, users have to lightly slide a finger over the smooth sensor area. To " click", gently tap on the surface. This action is the same as clicking the left of a mouse. If you "double click" it, the system will execute an operation.



Appendix F CHECK LIST

ITEM	PART NO.	Description	Q'ty	Remark
1	32000-000002	ROUND CABLE.POWER CORD..175CM.	1	By POWER SUPPLY
2	32000-023200	ROUND CABLE.VGA CABLE M TO M. 15PIN TO 15PIN.25CM.	1	By VGA CABLE
3	32000-000072	ROUND CABLE.MINI DIN M TO M..(27.5CM)...	2	By Touch pad to CPU CARD x1 By KEYBOARD x1
4	32000-000050	D_SUB 9PIN F TO M/50M	1	For:Touch sreen(OPTIONAL)
5	41015-000302	HOLDING CLAMP.(SHORT)..	4	By CARD CLAMP
6	41015-000402	HOLDING CLAMP.(LONG)..	3	By CARD CLAMP
7	19600-000003	UNIT SCREW WS serial.		
7-1	44003-030061	SCREW.M3*6...	10	
7-2	44003-632041	SCREW.6#32*4...	10	
7-3	44003-632061	SCREW 6#32*6...	10	
7-4	44013-030061	SCREW PLATE.M3*6...	10	
7-5	44013-632041	SCREW PLATE 6#32*4.Φ5mm..	5	
7-6	44310-632061	Bronze Stick.6#32*6. H=5mm..	12	
7-7	44033-030061	SCREW M3*6...	10	
7-8	44033-040062	SCREW M4*6.	10